

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT (IPER)
AMENDED CLAIMS**

EPO - DG 1

13. 01. 2005

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(65)

January 06, 2005

Our Reference: 8407 PCT - WEB

Process For The Automatic Control Of The Thickness Of Extruded Film I

Claims

1. Process for the automatic control of the thickness of extruded films that comprises the following features:
 - Measurement of the thickness profile of the film just extruded (8) with the help of a thickness-measuring probe (12) that is moved along the surface of the film substantially perpendicular (x) to the conveying direction (z) of the extruded film (8). The thickness-measuring probe records for each measuring cycle (MZ) a thickness profile (P) of the film (8) at least across parts of the expansion of the film (8) perpendicular (x) to its conveying direction (z),
 - Transmitting the measured values to a control unit (14, 15, 17),
 - Storage of the measured values underlying the thickness profiles in a storage unit (14),
 - Provision of statistical values of the film thickness (5) using a computer (14), where the computer (14) takes into account measured values or information derived therefrom using a definite number of measuring cycles (MZ),
 - Determination of the deviations in the statistical values of the film thickness (5) from a target value,
 - Generating control commands to a device for controlling the film thickness (5) characterized in

- **that** during a predetermined time-frame at the start of the extrusion process, measured values or information derived therefrom using or for a greater number of measuring cycles is made accessible to the computer (14) than those recorded by the thickness-measuring probe (12) in a time-frame of similar length during the normal operation and that
- **that** the computer (14) takes into account these measured values while providing the statistical values,
- **wherein** at least a part of these measured values originate from the storage unit (14),
- **that** makes accessible measured values or information derived therefrom to the computer (14),
- **wherein** these measured values or information derived therefrom originate from measuring cycles that were recorded in another extrusion process.

2. Process pursuant to claim 1

characterized in that

- the thickness-measuring probe (12) is moved during a predetermined time-frame at the start of the extrusion process more quickly along the surface of the extruded film (8) than in the normal operation
- and in doing so determines for each time unit the measured values from a larger number of measuring cycles than the number of measuring cycles used in the normal operation
- and makes these accessible to the computer (14).

3. Process pursuant to one of the aforementioned claims

characterized in that the storage unit (14) makes measured values or information derived therefrom accessible to the computer (14), which were recorded when the deviations in the film thickness (5) from the target value lay within acceptable tolerances.

4. Process pursuant to one of the aforementioned claims

characterized in that

various weighting factors are assigned to the measured values or the information derived therefrom using different measuring cycles with which the contribution of

the measured values or of the information derived therefrom to the statistical values is defined.

5. Process pursuant to the aforementioned claim

characterized in that

these weighting factors are changed at the start of the extrusion process.

6. Process pursuant to one of the aforementioned claims

characterized in that

the measured values or the information derived therefrom using other extrusion processes stored in the storage device (14) are assigned to the process parameters that prevailed when they were recorded.

7. Device for the automatic control of the thickness of the extruded film (8) having the following features:

- a thickness-measuring probe (12) for measuring the thickness profile of the film just extruded (8) that is moved along the surface of the film (8) substantially perpendicular (x) to the conveying direction (z) of the extruded film (8). The thickness measuring probe (12) records for each measuring cycle (MZ) a thickness profile (P) of the film (8) at least across parts of the expansion of the film (8) perpendicular (x) to its conveying direction (z),
- transmitting the measured values to a control unit (14, 15, 17),
- a storage unit (14) for recording the measured values and the information derived therefrom,
- a computer (14) for providing statistical values of the film thickness (5) taking into account measured values or information derived therefrom using a definite number of measuring cycles (MZ)
- wherein even the deviations in the statistical values of the film thickness (5) from a target value can be determined using the computer (14),
- a device (17) for generating control commands to a device for controlling the film thickness (5)

characterized in

- a computer (14) using which it is possible to take into account, during a predetermined time-frame at the start of the extrusion process, measured

values or information derived therefrom using or for a greater number of measuring cycles than those recorded by the thickness-measuring probe in a time-frame of similar length during the normal operation,

- a storage unit (14) in which it is possible to store measured values or information derived therefrom using measuring cycles that were recorded in another extrusion process
- communication means between the storage unit (14) and the computer (14) that provides to the computer (14) during a predetermined time-frame at the start of the extrusion process at least a part (14) of the measured values or information derived therefrom which the computer (14) then takes into account for this time-frame.